

=====

Sequence Listing was accepted.

If you need help call the Patent Electronic Business Center at (866)
217-9197 (toll free).

Reviewer: Durreshwar Anjum

Timestamp: [year=2009; month=6; day=9; hr=13; min=41; sec=54; ms=103;]

=====

Application No: 10580050

Version No: 1.0

Input Set:

Output Set:

Started: 2009-06-05 09:56:46.321

Finished: 2009-06-05 09:56:47.941

Elapsed: 0 hr(s) 0 min(s) 1 sec(s) 620 ms

Total Warnings: 182

Total Errors: 0

No. of SeqIDs Defined: 191

Actual SeqID Count: 191

| Error code | Error Description |
|------------|---|
| W 213 | Artificial or Unknown found in <213> in SEQ ID (7) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (8) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (9) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (10) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (11) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (12) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (13) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (14) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (15) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (16) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (20) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (21) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (22) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (23) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (24) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (25) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (26) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (27) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (28) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (29) |

Input Set:

Output Set:

Started: 2009-06-05 09:56:46.321
Finished: 2009-06-05 09:56:47.941
Elapsed: 0 hr(s) 0 min(s) 1 sec(s) 620 ms
Total Warnings: 182
Total Errors: 0
No. of SeqIDs Defined: 191
Actual SeqID Count: 191

Error code

Error Description

This error has occurred more than 20 times, will not be displayed

SEQUENCE LISTING

<110> CHOO, Qui-Lim
HOUGHTON, Michael
SCOTT, Elizabeth
WEINER, Amy

<120> METHODS AND REAGENTS FOR TREATING, PREVENTING AND DIAGNOSING
BUNYAVIRUS INFECTION

<130> 21454

<140> 10580050

<141> 2009-06-05

<150> PCT/US04/039333

<151> 2004-11-19

<160> 191

<170> PatentIn version 3.3

<210> 1

<211> 4527

<212> DNA

<213> La Crosse virus

<400> 1

| | | | | | | |
|-------------|-------------|------------|-------------|-------------|-------------|------|
| agtagtgtac | taccaagtat | agataacggt | tgaatattaa | agttttgaat | caaagccaaa | 60 |
| gatgatttgt | atattgggtgc | taattacagt | tgcagctgca | agcccagtg | atcaaagggtg | 120 |
| tttccaagat | ggggctatag | tgaagcaaaa | cccatccaaa | gaagcagtta | cagagggtgtg | 180 |
| cctgaaagat | gatgttagca | tgatcaaaac | agaggccagg | tatgtaagaa | atgcaacagg | 240 |
| agttttttca | aataatgtcg | caataaggaa | atggctagtc | tctgattggc | atgattgcag | 300 |
| gcctaagaag | atcggtgggg | gacacatcaa | tgtaatagaa | gttggtgatg | acctgtcact | 360 |
| ccatactgaa | tcatatgttt | gcagcgcaga | ttgtaccata | gggtgtagaca | aagagactgc | 420 |
| acaggtcagg | cttcagacag | ataccacaaa | tcattttgaa | attgcaggca | ctactgtgaa | 480 |
| gtcaggatgg | ttcaagagca | cgacatatat | aactcttgat | caaacttgcg | aacaccttaa | 540 |
| agtttcctgc | ggcccaaaat | ctgtacagtt | ccatgcctgc | ttcaatcagc | atatgtcttg | 600 |
| cgtcagattt | ttacacagga | caatattgcc | tggctctata | gccaattcca | tatgtcagaa | 660 |
| tatcgaaatc | ataatttttag | ttacacttac | tctattaatc | tttatattgt | taagcatttt | 720 |
| aagtaagact | tatatatgtt | atttattaat | gcctatatte | atccccatag | catatatata | 780 |
| cgggtataatt | tacaataagt | cgtgcaaaaa | atgcaaatta | tgtggcttag | tgtatcatcc | 840 |
| attcacagag | tgtggcacac | attgtgtctg | tgggtgcccgc | tatgatactt | cagatagaat | 900 |
| gaaactgcat | agagcttctg | gattgtgccc | tgggtataaaa | agcctaagag | ctgccagagt | 960 |
| catgtgcaag | togaaagggc | ctgcatcaat | attgtctata | attactgcgg | tactggtctt | 1020 |
| aacctttgtg | acaccaatca | actccatgg | tttagggagag | agtaaagaaa | cctttgaact | 1080 |
| tgaagatctt | ccagacgaca | tgttggaagt | ggcatcgaga | ataaattctt | attatctcac | 1140 |
| ctgtatcttg | aattatgctg | taagctgggg | tcttgttatc | attggattgt | tgatcgggct | 1200 |
| gcttttttaag | aaataaccagc | acagattctt | aaatgtttac | gcaatgtact | gtgaagaatg | 1260 |
| tgacatgtat | catgacaagt | ctgggttgaa | aagacatgg | gatttcacca | acaaatgcag | 1320 |
| acagtgcaca | tgtgggtcaat | atgaagatgc | tgcagggttg | atggctcaca | ggaaaaccta | 1380 |
| taactgctta | gtgcagtaca | aagcaaagt | gatgatgaac | ttcctgataa | tttacatatt | 1440 |
| cttaattttg | atcaaagatt | ctgctatagt | tgtacaagct | gctggaactg | acttcaccac | 1500 |
| ctgcctagag | actgagagta | taaattggaa | ctgcactggg | ccatttttga | acctcgggaa | 1560 |
| ttgccaaaag | caacaaaaga | aagaacctta | caccaacatt | gcaactcagt | taaagggact | 1620 |
| aaaggcaatt | tccgtactag | atgtccctat | aataacaggg | ataccagatg | atattgcggg | 1680 |

| | | | | | | |
|-------------|-------------|-------------|-------------|-------------|-------------|------|
| tgctttaaga | tatatagaag | agaaggaaga | tttccatgtc | cagctaacta | tagaatatgc | 1740 |
| gatgttaagc | aaatactgtg | actattatac | ccaattctca | gataactcag | gatacagtca | 1800 |
| gacaacatgg | agagtgtact | taaggtctca | tgattttgaa | gcctgtatac | tatatccaaa | 1860 |
| tcagcacttt | tcagatgtg | taaaaaatgg | tgagaagtgc | agcagctcca | attgggactt | 1920 |
| tgccaatgaa | atgaaagatt | attactctgg | gaaacaaaca | aagtttgaca | aggacttaaa | 1980 |
| tctagcccta | acagctttgc | atcatgcctt | cagggggacc | tcatctgcat | atatagcaac | 2040 |
| aatgctctca | aaaaagtcca | atgatgactt | gattgcatac | acaaataaga | taaaaacaaa | 2100 |
| attcccaggt | aatgcattgt | tgaaggctat | aatagattat | atagcatata | tgaaaagtgt | 2160 |
| gccaggtatg | gcaaatttca | aatatgatga | attctgggat | gaattactgt | acaaacccaa | 2220 |
| cccagcaaaag | gcctcaaacc | ttgctagagg | aaaggagtca | tcttacaact | tcaaactagc | 2280 |
| aatttcatca | aagtctataa | aaacctgcaa | gaatgttaag | gatgttgcct | gcttatcgcc | 2340 |
| aaggctcaggt | gctatatatg | cttcaataat | tgcgtgtggt | gaaccaatg | ggccaagtgt | 2400 |
| gtataggaaa | ccatcaggtg | gtgtattcca | atctagcact | gatcgtctca | tatactgctt | 2460 |
| gctggatagc | cattgtctag | aagaatttga | ggccatcggc | caggaggagc | tggatgcggt | 2520 |
| aaagaaatcc | aaatgttggg | aaattgaata | tcctgacgta | aagctcatcc | aagaaggcga | 2580 |
| tgggactaaa | agctgtagaa | tgaagatttc | tgggaactgc | aatgttgcaa | ctaacagatg | 2640 |
| gccagtgata | caatgtgaga | atgacaaatt | ttactactca | gagcttcaaa | aagattatga | 2700 |
| caaagctcaa | gatattggtc | actattgctt | aagccctgga | tgtactactg | tccggtaccc | 2760 |
| tattaatcca | aagcacatct | ctaactgtaa | ttggcaagta | agcagatcta | gcatagcgaa | 2820 |
| gatagatgtg | cacaatattg | aggatattga | gcaatataag | aaagctataa | ctcagaaaact | 2880 |
| tcaaacgagc | ctatctctat | tcaagtatgc | aaaaacaaaa | aacttgccgc | acatcaaacc | 2940 |
| aattttataaa | tatataacta | tagaaggaac | agaaactgca | gaaggtatag | agagtgcata | 3000 |
| cattgaatca | gaagtacctg | cattggctgg | gacatctatc | ggattcaaaa | tcaattctaa | 3060 |
| agagggcaag | cacttgctag | atgttatagc | atatgtaaaa | agtgcctcat | actcttcagt | 3120 |
| gtatacaaaa | ttgtactcaa | ctggcccaac | atcagggata | aataactaac | atgatgaatt | 3180 |
| gtgtactggc | ccatgccccag | caaatatcaa | tcacaggtt | gggtggctga | catttgcaag | 3240 |
| agagaggaca | agctcatggg | gatgcgaaga | gtttggttgc | ctggctgtaa | gtgatgggtg | 3300 |
| tgtattttgga | tcatgccaaag | atataataaa | agaagaacta | tctgtctata | ggaaggagac | 3360 |
| cgaggaagtg | actgatgtag | aactgtgttt | gacattttca | gacaaaacat | actgtacaaa | 3420 |
| cttaaacctt | gttaccctta | ttataacaga | tctatttgag | gtacagttca | aaactgtaga | 3480 |
| gacctacagc | ttgcctagaa | ttgttgctgt | gcaaaacat | gagattaaaa | ttgggcaaat | 3540 |
| aaatgattta | ggagtttact | ctaagggttg | tgggaatgtt | caaaagggtca | atggaactat | 3600 |
| ttatggcaat | ggagttccca | gatttgacta | cttatgccat | ttagctagca | ggaagggaagt | 3660 |
| cattgttaga | aaatgcttcg | acaatgatta | ccaagcatgc | aaatttcttc | aaagccctgc | 3720 |
| tagttacaga | cttgaagaag | acagtggcac | tgtgaccata | attgactaca | aaaagatttt | 3780 |
| aggaacaatc | aagatgaagg | caatttttagg | agatgtcaaa | tataaaacat | ttgctgatag | 3840 |
| tgtcgatata | accgcagaag | ggtcatgcac | cggtgtgatt | aactgcttcg | aaaatatcca | 3900 |
| ttgcgaatta | acgttgcaca | ccacaattga | agccagctgc | ccaattaaaa | gctcgtgcac | 3960 |
| agtatttcat | gacaggattc | ttgtgactcc | aatgaacac | aaatatgcat | tgaaaatggt | 4020 |
| gtgcacagaa | aagccaggga | acacactcac | aattaaagtc | tgcaatacta | aagttgaagc | 4080 |
| atctatggcc | cttgtagacg | caaagcctat | catagaacta | gcaccagttg | atcagacagc | 4140 |
| atatataaga | gaaaaagatg | aaagggtgtaa | aacttggatg | tgtagggtaa | gagatgaagg | 4200 |
| actgcaggtc | atcttggagc | catttaaaaa | tttattttgga | tcttatattg | ggatatttta | 4260 |
| cacattttatt | atatctatag | tagtattatt | ggttattatc | tatgtactac | tacctatatg | 4320 |
| ctttaagtta | agggataccc | ttagaaagca | tgaagatgca | tataagagag | agatgaaaat | 4380 |
| tagatagggg | atctatgcag | aacaaaattg | agtcctgtat | tatatacttc | tattttgtagt | 4440 |
| atagctgttg | ttaagtgggg | ggtggggaac | taacaacagc | gtaaatttat | tttgcaaaaca | 4500 |
| ttattttata | cttggtagca | cactact | | | | 4527 |

<210> 2

<211> 299

<212> PRT

<213> La Crosse virus

<400> 2

Met Ile Cys Ile Leu Val Leu Ile Thr Val Ala Ala Ala Ser Pro Val

| | | | |
|---|-----|-----|-----|
| 1 | 5 | 10 | 15 |
| Tyr Gln Arg Cys Phe Gln Asp Gly Ala Ile Val Lys Gln Asn Pro Ser | | | |
| 20 | 25 | 30 | |
| Lys Glu Ala Val Thr Glu Val Cys Leu Lys Asp Asp Val Ser Met Ile | | | |
| 35 | 40 | 45 | |
| Lys Thr Glu Ala Arg Tyr Val Arg Asn Ala Thr Gly Val Phe Ser Asn | | | |
| 50 | 55 | 60 | |
| Asn Val Ala Ile Arg Lys Trp Leu Val Ser Asp Trp His Asp Cys Arg | | | |
| 65 | 70 | 75 | 80 |
| Pro Lys Lys Ile Val Gly Gly His Ile Asn Val Ile Glu Val Gly Asp | | | |
| 85 | 90 | 95 | |
| Asp Leu Ser Leu His Thr Glu Ser Tyr Val Cys Ser Ala Asp Cys Thr | | | |
| 100 | 105 | 110 | |
| Ile Gly Val Asp Lys Glu Thr Ala Gln Val Arg Leu Gln Thr Asp Thr | | | |
| 115 | 120 | 125 | |
| Thr Asn His Phe Glu Ile Ala Gly Thr Thr Val Lys Ser Gly Trp Phe | | | |
| 130 | 135 | 140 | |
| Lys Ser Thr Thr Tyr Ile Thr Leu Asp Gln Thr Cys Glu His Leu Lys | | | |
| 145 | 150 | 155 | 160 |
| Val Ser Cys Gly Pro Lys Ser Val Gln Phe His Ala Cys Phe Asn Gln | | | |
| 165 | 170 | 175 | |
| His Met Ser Cys Val Arg Phe Leu His Arg Thr Ile Leu Pro Gly Ser | | | |
| 180 | 185 | 190 | |
| Ile Ala Asn Ser Ile Cys Gln Asn Ile Glu Ile Ile Ile Leu Val Thr | | | |
| 195 | 200 | 205 | |
| Leu Thr Leu Leu Ile Phe Ile Leu Leu Ser Ile Leu Ser Lys Thr Tyr | | | |
| 210 | 215 | 220 | |
| Ile Cys Tyr Leu Leu Met Pro Ile Phe Ile Pro Ile Ala Tyr Ile Tyr | | | |
| 225 | 230 | 235 | 240 |
| Gly Ile Ile Tyr Asn Lys Ser Cys Lys Lys Cys Lys Leu Cys Gly Leu | | | |
| 245 | 250 | 255 | |
| Val Tyr His Pro Phe Thr Glu Cys Gly Thr His Cys Val Cys Gly Ala | | | |
| 260 | 265 | 270 | |
| Arg Tyr Asp Thr Ser Asp Arg Met Lys Leu His Arg Ala Ser Gly Leu | | | |
| 275 | 280 | 285 | |
| Cys Pro Gly Tyr Lys Ser Leu Arg Ala Ala Arg | | | |
| 290 | 295 | | |

<210> 3
<211> 984
<212> DNA
<213> La Crosse virus

<400> 3
agtagtgtac cccacttgaa tactttgaaa ataaattggt gttgactggt ttttacctaa 60
ggggaaatta tcaagagtgt gatgtcggat ttggtgtttt atgatgtcgc atcaacaggt 120
gcaaattgat ttgatcctga tgcagggtat atggacttct gtgttaaaaa tgcagaatta 180
ctcaaccttg ctgcagttag gatcttcttc ctcaatgccg caaaggccaa ggctgctctc 240
tcgcgtaagc cagagaggaa ggctaaccct aaatttggag agtggcaggt ggaggttatc 300
aataatcatt ttcctggaaa caggaacaac ccaattggta acaacgatct taccatccac 360
agattatctg ggtatttagc cagatgggtc cttgatcagt ataacgagaa tgatgatgag 420
tctcagcacg agttgatcag aacaactatt atcaacccaa ttgctgagtc taatggtgta 480
ggatgggaca gtgggccaga gatctatcta tcattctttc caggaacaga aatgtttttg 540
gaaactttca aattctaccc gctgaccatt ggaattcaca gagtcaagca aggcgatgatg 600
gaccctcaat acctgaagaa ggcttaagg caacgctatg gcactctcac agcagataag 660
tggtatgtcac agaaggttgc agcaattgct aagagcctga aggatgtaga gcagcttaaa 720
tggggaaaag gaggcctgag cgatactgct aaaacattcc tgcagaaatt tggcatcagg 780
cttcataaaa tatggcatga ggcattcaaa ttaggttcta aattctaaat ttatatatgt 840
caatttgatt aattgggtat ccaaaagggt tttcttaagg gaaccacaa aaatagcagc 900
taaattgggtg ggtggtaggg gacagcaaaa aactataaat caggtcataa ataaaataaa 960
atgtattcag tggggcacac tact 984

<210> 4
<211> 235
<212> PRT
<213> La Crosse virus

<400> 4
Met Ser Asp Leu Val Phe Tyr Asp Val Ala Ser Thr Gly Ala Asn Gly
1 5 10 15

Phe Asp Pro Asp Ala Gly Tyr Met Asp Phe Cys Val Lys Asn Ala Glu
20 25 30

Leu Leu Asn Leu Ala Ala Val Arg Ile Phe Phe Leu Asn Ala Ala Lys
35 40 45

Ala Lys Ala Ala Leu Ser Arg Lys Pro Glu Arg Lys Ala Asn Pro Lys
50 55 60

Phe Gly Glu Trp Gln Val Glu Val Ile Asn Asn His Phe Pro Gly Asn
65 70 75 80

Arg Asn Asn Pro Ile Gly Asn Asn Asp Leu Thr Ile His Arg Leu Ser
85 90 95

Gly Tyr Leu Ala Arg Trp Val Leu Asp Gln Tyr Asn Glu Asn Asp Asp
100 105 110

Glu Ser Gln His Glu Leu Ile Arg Thr Thr Ile Ile Asn Pro Ile Ala
115 120 125

Glu Ser Asn Gly Val Gly Trp Asp Ser Gly Pro Glu Ile Tyr Leu Ser
130 135 140

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Phe | Pro | Gly | Thr | Glu | Met | Phe | Leu | Glu | Thr | Phe | Lys | Phe | Tyr | Pro |
| 145 | | | | | 150 | | | | 155 | | | | | | 160 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Thr | Ile | Gly | Ile | His | Arg | Val | Lys | Gln | Gly | Met | Met | Asp | Pro | Gln |
| | | | 165 | | | | | | 170 | | | | | 175 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Leu | Lys | Lys | Ala | Leu | Arg | Gln | Arg | Tyr | Gly | Thr | Leu | Thr | Ala | Asp |
| | | 180 | | | | | 185 | | | | | | 190 | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Trp | Met | Ser | Gln | Lys | Val | Ala | Ala | Ile | Ala | Lys | Ser | Leu | Lys | Asp |
| | 195 | | | | | 200 | | | | | | 205 | | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Glu | Gln | Leu | Lys | Trp | Gly | Lys | Gly | Gly | Leu | Ser | Asp | Thr | Ala | Lys |
| 210 | | | | | | 215 | | | | | 220 | | | | |

| | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Phe | Leu | Gln | Lys | Phe | Gly | Ile | Arg | Leu | Pro |
| 225 | | | | 230 | | | | | 235 | |

<210> 5
 <211> 6980
 <212> DNA
 <213> La Crosse virus

<400> 5

| | | | | | | |
|-------------|-------------|-------------|------------|-------------|-------------|------|
| agtagtgtac | ccctatctac | aaaacttaca | gaaaattcag | tcatatcaca | atatatgcat | 60 |
| aatggactat | caagagtatc | aacaattctt | ggctaggatt | aatactgcaa | gggatgcatg | 120 |
| tgtagccaag | gatatcgatg | ttgacctatt | aatggccaga | catgattatt | ttggtagaga | 180 |
| gctgtgcaag | tccttaaata | tagaatatag | gaatgatgta | ccatttgtag | atataatttt | 240 |
| ggatataaag | cccgaagtag | accattaac | catagatgca | ccacatatta | ccccagacaa | 300 |
| ttatctatat | ataaataatg | tgttatatat | catagattat | aaggctctctg | tatcgaatga | 360 |
| aagcagtgtt | ataacatatg | acaaatatta | tgagttaact | agggacatat | cgatagatt | 420 |
| aagtattcca | atagaaatag | ttatcggtccg | tatagaccct | gtaagtaagg | atttgcatat | 480 |
| taactctgat | agatttaaag | aactttaccc | tacaatagtg | gtggatataa | acttcaatca | 540 |
| atTTTTcgac | ttaaaacaat | tactctatga | aaaattcggt | gatgatgaag | aattcctatt | 600 |
| gaaagttgca | catggtgact | tactctttac | agcaccctgg | tgcaagactg | ggtgcctga | 660 |
| atTTTTgaaa | cacccatttt | ataaagaatt | taaaatgagt | atgccagtac | ctgagcggag | 720 |
| gctctttgaa | gaatctgtca | agttcaatgc | ttatgaatct | gagagatgga | atactaactt | 780 |
| ggttaaaatc | agagaatata | caaagaaaga | ctattcagag | catatttcaa | aatctgcaaa | 840 |
| aaatattttc | ctggctagtg | gattttataa | gcagccaaat | aagaatgaga | ttagtgaggg | 900 |
| gtggacatta | atggttgaga | gggttcaaga | tcagagagaa | atctcaaaat | ctctccatga | 960 |
| ccagaaacct | agcatacatt | ttatatgggg | agcccataac | ccaggaaata | gtaataatgc | 1020 |
| aaccttcaaa | ctcatattgc | tttcaaagtc | cttacaagtc | ataaaaggta | tatcaactta | 1080 |
| cacagaagcg | ttcaaattctt | taggaaaaat | gatggatatt | ggagataagg | ctattgagta | 1140 |
| tgaagaattc | tgcatgtccc | taaaaagcaa | agcaagatca | tcatggaagc | aaataatgaa | 1200 |
| caaaaaatta | gagcctaaac | aaataaacia | tgcccttggt | ttatgggaac | agcagtttat | 1260 |
| ggtaaaataat | gacctgatag | acaaaagtga | gaagttgaaa | ttattcaaaa | atttctgcgg | 1320 |
| tataggcaaa | cacaagcaat | tcaagaataa | aatgctagag | gatctagaag | tgtcaaagcc | 1380 |
| caaaatatta | gactttgatg | acgcaaatat | gtatctagct | agcctaacca | tgatggaaca | 1440 |
| gagtaagaag | atattgtcca | aaagcaatgg | gttgaagcca | gataatttta | tactgaatga | 1500 |
| atttggtatcc | aaaatcaaag | atgctaataa | agaacatat | gacaatatgc | acaaaatatt | 1560 |
| tgagacaaga | tattggcaat | gtatatccga | cttctctact | ctgatgaaaa | atatcttatc | 1620 |
| tgtgtcccaa | tataacaggc | acaacacatt | taggatagct | atgtgtgcta | ataacaatgt | 1680 |
| ctttgtctata | gtatttcctt | cggctgacat | aaaaactaag | aaagcaactg | tagttttatag | 1740 |
| cattatagtg | ctgcataaag | aggaagaaaa | catattcaac | ccaggatgtt | tgcacggcac | 1800 |
| atttaagtgt | atgaatgggt | atatttccat | atctagagct | ataaggctag | ataaagagag | 1860 |

| | | | | | | |
|------------|-------------|-------------|------------|-------------|-------------|------|
| gtgccagaga | attgtttcct | cacctggact | gtttttaaca | acttgcctac | tattcaaaca | 1920 |
| tgataatcca | actctagtga | tgagcgatat | tatgaatfff | tctatatata | ctagcctgtc | 1980 |
| tatcacaaag | agtgttctat | ctttaacaga | gccagcacgc | tacatgatta | tgaactcatt | 2040 |
| agctatctcc | agcaatgtta | aggactatat | agcagagaaa | ttttccctt | acacaaagac | 2100 |
| actgttcagt | gtctatatga | ctagactaat | taaaaatgct | tgctttgatg | cttatgacca | 2160 |
| gagacagcgt | gtccaactta | gagatatata | tttatctgat | tatgacataa | cccaaaaagg | 2220 |
| tattaaagac | aatagagagc | taacaagtat | atggttccct | ggtagtgtaa | cattaaagga | 2280 |
| gtatttaaca | caaatatact | taccatttta | ttttaatgct | aaaggactac | atgagaagca | 2340 |
| ccatgtcatg | gtggatctag | caaagactat | attagaaata | gagtgcgaac | agagggaaaa | 2400 |
| cataaaggag | atatggtcta | caaattgtac | caaacagaca | gtgaacctta | aaatfffat | 2460 |
| ccattccttg | tgcaagaatt | tactagcaga | cacttcaaga | cacaaccact | tgcggaacag | 2520 |
| aatagaaaat | aggaacaatt | ttagaagggtc | tataacaact | atttcaacat | ttacaagttc | 2580 |
| aaagtcttgc | ctcaaatag | gggacttttag | aaaagagaaa | gagctgcagt | cagttaaaca | 2640 |
| gaagaaaatc | ttagagggtgc | agagtgcgaa | aatgagatta | gcaaacccaa | tgttcgtgac | 2700 |
| agatgaacaa | gtatgccttg | aagttgggca | ctgcaattat | gagatgctga | ggaatgctat | 2760 |
| gccgaattat | acagattata | tatcaactaa | agtatttgat | aggttatatg | agttattaga | 2820 |
| taaaggagtt | ttgacagaca | agcctgttat | agagcaaata | atggatatga | tggtcgacca | 2880 |
| caaaaagttc | tatttcacat | ttttcaataa | aggccagaaa | acgtcaaagg | atagagagat | 2940 |
| attcgttggg | gaatatgaag | ctaaaatgtg | tatgtacgca | gttgagagaa | tagcaaaaaga | 3000 |
| aagatgtaaa | ttaaatcctg | atgaaatgat | atctgagccg | ggtgatggca | agttgaaggt | 3060 |
| gttggagcaa | aaatcagaac | aagaaattcg | attcttggtc | gagactacaa | ggcaaaaaga | 3120 |
| tcgtgaaatc | gatgaggcaa | ttgaagcatt | agctgcagaa | ggatatgaga | gtaatctaga | 3180 |
| aaaaattgaa | aagctttcac | ttggcгааagc | aaagggccta | aagatggaaa | taaatgcaga | 3240 |
| tatgtctaaa | tggagtgtc | aggatgtttt | ttataaatat | ttctggctca | tagccttaga | 3300 |
| ccctatcctc | taccacagag | aaaaagagag | aatattatac | tttatgtgca | actacatgga | 3360 |
| taaagaattg | atactgccag | atgaattatt | attcaatffg | ctggacccaa | aagttgcata | 3420 |
| ccagaatgat | ataatagcta | ctatgactaa | tcaattaaat | tcaaatacag | ttctgataaa | 3480 |
| gagaaattgg | ctccaaggga | atttcaacta | cacctcaagt | tacgtccata | gctgcgcaat | 3540 |
| gtctgtgtat | aaagaaatat | taaaagaggc | cataacatta | ctagacgggt | ctatattagt | 3600 |
| caactcatta | gtccattcgg | atgataacca | aacatcgata | acaatagtfc | aggataagat | 3660 |
| ggaaaatgat | aaaattatag | attttgcaat | gaaagaattt | gagagagcct | gtttgacatt | 3720 |
| tggatgccaa | gcaaatatga | aaaagacata | tgtaacaaat | tgcataaaaag | agttttgtttc | 3780 |
| attatffaac | ttgtacggcg | aacccttttc | aatatatggc | agattcctat | taacatctgt | 3840 |
| gggtgattgt | gcctatatag | ggccttatga | agatttagct | agtcgaatat | catcagccca | 3900 |
| gacagccata | aagcatggtt | gtccaccag | tctagcatgg | gtgtccatag | caataagtca | 3960 |
| ttggatgacc | tctctgacat | acaacatgct | accagggcag | tcaaatagacc | caattgatta | 4020 |
| tttccctgca | gaaaatagga | aggatatccc | tatagaattg | aatggtgtat | tagatgctcc | 4080 |
| attgtcaatg | attagtacag | ttggattgga | atctgggaat | ttatacttct | tgataaagtt | 4140 |
| gttgagcaaa | tataccccgg | tcatgcagaa | aagagagtca | gtagtcaacc | aaatagctga | 4200 |
| agttaagaac | tgggaaggctg | aggatctaac | agacaatgaa | atatttagac | ttaaaatact | 4260 |
| cagatatffa | gttctagatg | cagagatgga | ccctagtgat | attatgggtg | agacaagcga | 4320 |
| catgagaggg | aggctctattt | tgacacctag | aaaattcaca | acagcaggca | gtttaaggaa | 4380 |
| attatattct | ttcagtaagt | accaggatag | actgtcttcc | cctggaggca | tggttgaatt | 4440 |
| gttcacttat | ttgcttgaga | aacctgagtt | gttagtgact | aaaggggaag | atatgaaaga | 4500 |
| ttatatggaa | tctgtgatat | tccgatataa | ttccaaaagg | ttcaaagaaa | gtttgtcaat | 4560 |
| acagaaccca | gcacaattat | ttatagaaca | gatattgttc | tcacataagc | ccataat | |